

ABSTRACT

A polymer actuator (1) which comprises a plurality of gel/electrode complexes (4a, 4b) arranged in an electrolytic solution (6), said gel/electrode complex being composed of a polymeric hydrogel (2a, 2b) containing acidic or basic functional groups and electrodes (3a, 3b) placed in the polymeric hydrogel, such that it changes in volume upon application of a voltage across said electrodes. The polymer actuator expands and contracts in the linear direction without curved deformation. It is light in weight and is capable of control with a low voltage.